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## *INTUBATION IN LARYNGEAL STENOSIS CAUSED BY DIPHTHERIA.\**

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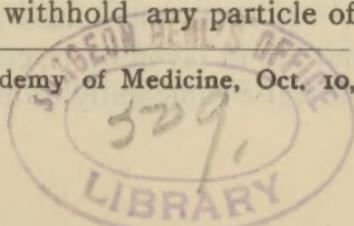
AS a preface to this paper, I wish to call attention to my paper on the subject of "Intubation Contrasted with Tracheotomy," a full report of which can be found in the AMERICAN LANCET of December, 1891.

Since publishing that paper several cases of laryngeal stenosis have come under my care, in all of which I have intubated; with what success the accompanying statistics show.

This evening it is my object to determine the value of intubation as a method of relieving the dyspnoea caused by laryngeal stenosis. In comparing the relative value of any two operations in this disease, it is not sufficient merely to state the statistical results obtained; one must take into consideration the age, duration, the presence or absence of one or more of the many complications usually attending such cases (*e.g.*, sepsis, pertussis, pneumonia, scarlatina, extension of the membrane into the tubes), likewise the patient's surroundings, the care, etc., which the patient is receiving—which in cases of this kind is an all-important factor.

When drawing up this paper it was my intention to lay before you a correct and veracious statement of the success or failure of cases treated by me by means of the intubation tube. For should I withhold any particle of

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the truth or suppress the report of any unsuccessful cases, and only place before your notice those which had been attended with success, I should be doing a grave injustice to the public, to intubation, and also to you gentlemen, by misrepresenting facts and thereby leading you to believe thoroughly in its efficacy as a radical means of relief in cases of this kind, as well as in all cases of dyspnoea from any cause whatsoever.

The cases which I intend calling to your notice, in all sixteen, were seen in consultation with other physicians, many of whom belong to this illustrious body. I have operated on sixteen cases of laryngeal stenosis caused by diphtheria, of which six, or 37½ per cent., recovered. Of these, eight were males. A fourth of these were under three years of age, and two were moribund before operated on. In fatal cases the average length of life after operation was two days and twelve hours. In successful cases the average length of time tube was in larynx was four days. In no case have I introduced the tube until dyspnoea was extreme, and in no case was membrane pushed down in sufficient quantity to produce fatal obstruction during the operation.

I have never refused to operate in a single case of advanced laryngeal obstruction, no matter how hopeless the case seemed.

In addition to the following cases given in detail, I have seen or have been consulted with regard to two cases of laryngeal diphtheria accompanied by grave dyspnoea, both of which recovered without operation.

If those physicians who are opposed to intubation and are in favor of tracheotomy, and who have handled the knife sufficiently to make their opinion of any value,

will give us a complete report of their cases, it will be of the greatest benefit in comparing these operations, and would quickly relegate tracheotomy to its proper position as a radical means of relief in laryngeal dyspnœa.

I wish to call your attention to the fact that attached to the report of each case will be found the name of the physician by whose courtesy I was enabled to operate:

*Case 1.*—Physician, Dr. W. J. Wilson. Male, æt. 3 years 6 months; suffering from scarlet fever one week; also had bronchitis and was quite croupy for two or three days previous to my seeing the case. Every effort was made to relieve the dyspnœa, which gradually grew worse. Upon examination I found a great deal of œdema of the glottis, which led me to give a guarded prognosis. I introduced the tube with some difficulty; the child only received partial relief, and wore the tube sixteen hours. Died from collapse.

*Case 2.*—Physician, Dr. J. B. Kennedy. Female, æt. 6 years. This child had been suffering three or four days from croup, which was thought to be nothing but stridulous. The stenosis became so severe that intubation was suggested by attending physician. The family consented, and I intubated with immediate relief. The child wore the tube four days. Extracted tube on evening of fourth day. Child made speedy recovery.

*Case 3.*—Physician, Dr. P. C. Dulitz. Female, æt. 14 months. Child had been suffering from pharyngeal diphtheria for five days, and showed symptoms of laryngeal obstruction for two days. The stenosis was so grave that on introducing the tube the patient became easy and respiration became almost normal; but despite all efforts the child died two days following from exten-

sion of the membrane to the tubes. This case was almost hopeless from the first.

*Case 4.*—Physician, Dr. Bigg. Female, æt. 7 years. Suffering from increasing laryngeal dyspnœa for two days. This patient had a very high temperature; mucous râles could be plainly heard all over the chest. The girl was greatly relieved by the tube, and did very well that night, but death resulted the following day from sepsis.

*Case 5.*—Physician, Dr. W. J. Brand. Male, æt. 5 years. Suffering from pharyngeal diphtheria four days. Somewhat croupy from beginning of the attack. The characteristic symptoms of stenosis presented themselves in a marked degree. The child wore the tube for three and a-half days, making an uninterrupted recovery.

*Case 6.*—Physician, Dr. J. B. Kennedy. Male, æt. 12 months. Laryngeal obstruction presented itself fourteen hours before intubation. Four of the other children were suffering from malignant diphtheria at the same time. Child wore tube one day; died in my absence from extension to tubes.

*Case 7.*—Physician, Dr. P. C. Dulitz. Female, æt. 7 years. Suffered two days from laryngeal obstruction. I intubated, but child did not appear to rally very much, though the breathing was improved to a very marked degree. Died the following day, of sepsis. I might state the urine was loaded with albumen.

*Case 8.*—Physician, Dr. John Lee. Male, æt. 2 years. Malignant diphtheria four days, gradually increasing obstruction. Intubated without any great relief. I was called next morning with Dr. Lee and found the child breathing very rapidly; pulse very feeble; temperature  $104^{\circ}$ . Apparently little or no obstruction

in tube. I removed the tube, and the child collapsed and died in a short time.

*Case 9.*—Dr. J. P. O'Dwyer. My own case in consultation with Dr. Chapoton. Female, æt. 6 years and 6 months. Pharyngeal diphtheria six days; for three days gradually increasing laryngeal obstruction. I deferred intubation until stenosis was extreme, as I had ample opportunity to watch the child. They sent for me suddenly the following day, and as I entered the house the father said the child was dead. I seized a tube and placed it in the larynx with no resistance whatever; immediately the stenosis was relieved. Previous to my introducing the tube the stenosis was almost complete. Respiration returned. Child wore tube with great difficulty for seven days, and made a good recovery. Three others of the family were suffering at the same time from diphtheria.

*Case 10.*—Physician, Dr. J. Campbell. Male, æt 6 years. Laryngeal diphtheria two days. Stenosis marked for fourteen hours previous to intubation. The little fellow wore the tube nicely for one day, then coughed it out and made a speedy recovery without further operative interference.

*Case 11.*—Physician, Dr. P. C. Dulitz. Male, æt. 5 years. Suffered one day from laryngeal obstruction, which became so marked that the little fellow became unconscious. The history obtained from parents failed to show any preceding symptoms of diphtheria. Twelve hours before I saw him he was running around, and, although distressed, the symptoms did not alarm the parents. The little fellow regained consciousness and asked for a drink. I saw him the day following and

gave a very favorable prognosis. I instructed the parents to keep the child very quiet, as he was disposed to running around. That same evening in his mother's absence the little fellow got out of bed and went to the table to help himself. No sooner had he reached the table than he fell back dead. The noise attracted the mother's attention. She was so stunned to find her boy dead that she said nothing of the manner of his death until applying for the certificate. I am certain that had the child remained quiet he would have made a speedy recovery, as everything was favorable towards it.

*Case 12.*—Physician, Dr. Aaron. Male, æt. 5 years. Had been suffering from pharyngeal diphtheria four days. Two days following the primary attack, the Doctor noticed that the disease had extended into the larynx. Tracheotomy was suggested, but, the people refusing, intubation was performed. The boy wore the tube for three and a-half days with little difficulty, and made a good recovery.

*Case 13.*—Physician, Dr. W. J. Wilson. Male, æt. 7 years. The disease began in the larynx, and the diagnosis was made from general symptoms. The dyspnæa became very prominent, and the Doctor did everything in his power to relieve it, but as the child grew worse he asked me to intubate that evening. I did so with little difficulty in the presence of Drs. Wilson and Jackman. The Doctor reported the case the following morning as doing nicely, and I had good hopes of its recovery. Next day the child became worse, and died of sepsis in the evening.

*Case 14.*—Physician, Dr. J. B. Kennedy. Female, æt. 2 years 5 months. There was nothing unusual in

this case. The child wore the tube two and a-half days, and died of sepsis.

*Case 15.*—Physicians, Dr. J. P. O'Dwyer and Dr. McEachren. Male, æt. 4 years. This little patient was suffering from measles at the time he developed laryngeal diphtheria. He contracted bronchitis, thereby aggravating his case. I watched him closely for two days, when it became necessary to give him some relief other than could be obtained by the use of medicine. After intubation he made a very slow recovery. Having worn the tube four days, I removed it, and although the dyspnœa had not entirely disappeared he managed to struggle through without the aid of another tube. This was one of those cases which had absolutely no care and many complications, but still survived them all. His brother also suffered from laryngeal dyspnœa from same cause, and, although very tedious, did not require operation.

*Case 16.*—Physician, Dr. W. J. Brand. Female, æt. 4 years 6 months. This patient was suffering from pharyngeal diphtheria with some croupiness for three days. The dyspnœa became so grave that intubation was performed, with the usual result. I had some little difficulty in placing the tube in the larynx, and as I did so I felt the epiglottis, which had become cartilaginous—always, I think, a fatal symptom. The child did nicely that night and the following day. The morning following I was summoned in great haste, and in the presence of Dr. W. J. Brand I removed the tube, which was perfectly clear, and still the dyspnœa grew worse. I inserted a new tube, with no effect. The child died one hour later from collapse. This case is especially inter-

esting, as one might naturally suppose that death was caused from pushing down the membrane below the tube. Tracheotomy was afterward suggested, but I am certain the result would have been the same, as I have seen it used in such cases several times.

These cases were all treated, with the exception of one or two, with the bichloride of mercury, tincture chloride of iron, and usual local remedies. The majority, however, received much smaller doses of bichloride than I would recommend. I am in the habit of giving  $\frac{3}{8}$  to  $\frac{1}{8}$  grain in an ounce of water (which is very essential) every hour.

In not one case did I experience any difficulty in feeding, nor have I had a single death on the table, with one exception—the case with Dr. Lee, which was due to collapse upon removal of the tube, and which would have died in half an hour at the longest had the tube been left in.

If every member of the Academy, or I may say every brother physician, had the opportunity of knowing the opinion of those who have given this a fair trial, I feel confident that this operation would be more generally practiced. I therefore trust that members of this worthy body will not think that I am imposing on their kindness. Let them give it a thorough study, and they will find that there are many others in our profession who advocate this method in preference to all others as a means of radical relief in all forms of laryngeal stenosis.